

TECHNICAL SUMMARY
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
FCC FILE NO. BNPFT-20171205ABN
FM TRANSLATOR STATION W284DG
HEMPSTEAD, NEW YORK
CHANNEL 284 (104.7 MHZ) 0.25 KW (DA)

1. Application Purpose: It is proposed to modify the construction permit for W284DG (FCC File No. BNPFT-20171205ABN, Facility ID 201346) to change the transmitter site and modify its facilities.

2. Fill-in Translator Coverage & Minor Change Compliance: Station W284DG is a fill-in translator for AM station WHLI on 1100 kHz at Hempstead, NY (Facility ID 38337). Figure 1 is a map demonstrating that the proposed 60 dBu contour is within a 25 mile circle from the WHLI transmitter site as required for fill-in compliance. In addition, the proposal complies with the FCC's minor change rules as there will be overlap of the authorized and proposed 60 dBu contours.

3. Section 74.1204 compliance: Figure 2 is an allocation study for channel 284 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (91 meters) and ERP (0.25 kW) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3 demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules, except with respect to stations WAXQ and WWPR-FM discussed below.

As indicated on Figure 3, there is currently overlap of the authorized W284DG 40 dBu, f(50,10) contour with the 60 dBu contours for the licensed (BLFT-20180723AAH) and authorized (BPFT-20180912AAZ) operations of W284BW on channel 284 at New York, NY. The proposed W284DG 40 dBu, f(50,10) contour will not increase the authorized contour overlap which is believed to comply with Section 74.1204.

As indicated above, the proposal does not comply with the contour overlap provisions of Section 73.1204 of the FCC rules with respect to second lower adjacent channel station WAXQ (Ch. 282B/104.3 MHz, New York, NY) and second upper adjacent channel station WWPR-FM (Ch. 286B/105.1 MHz, New York, NY). However, based on the undesired-to-desired (U/D) signal strength interference ratio methodology, which is permitted by the FCC (per Living Way Ministries, Inc., 17 FCC Rcd 17054, 17056, 2002), it has been determined that no actual interference would occur due to lack of population under Section 74.1204(d). Stations WAXQ and WWPR-FM operate with identical facilities. Therefore, the calculated F(50,50) field strength for both WAXQ and WWPR-FM at the proposed site is 69.9 dBu.

Using the 40 dB U/D ratio contained in Section 74.1204 of the FCC rules, the proposed f(50,10) interfering signal is 109.9 dBu. Figure 4 is graph of the proposed 109.9 dBu signal using the vertical plane relative field pattern for the proposed Shively model SLV-3, 3-bay HW antenna (see Figure 5) and assuming free space propagation. As indicated, the interfering 109.9 dBu signal will not reach ground level and, therefore, will contain no population per Section 74.1204(d).

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed transmitting antenna will be located 76 meters above ground level. The total ERP is 0.500 kW (horizontal and vertical polarization). Using a worst-case vertical plane relative field of 1.0 and a total ERP of 0.5 kW (circular polarization), the calculated power density at 2 meters above ground level at the base of the tower is 3.1 $\mu\text{W}/\text{cm}^2$ which is only 1.5% of the FCC's recommended limit of 200 $\mu\text{W}/\text{cm}^2$ for FM frequencies for an uncontrolled environment and only 0.31% of the FCC's recommended limit of 1000 $\mu\text{W}/\text{cm}^2$ for FM frequencies for a controlled environment. Therefore, it is believed that the proposed operation is in full compliance with the FCC's requirements with regard to RFR exposure.

The transmitting site will be appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



AM FILL-IN COMPLIANCE MAP
FM TRANSLATOR STATION W284DG
HEMPSTEAD, NEW YORK
CH 284 (104.7 MHZ) 0.250 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

FM Contour Study LMS

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Channel: 284 **Coordinates:** 040-41-06 073-36-35 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 91 m

Comment: Proposed W284DG

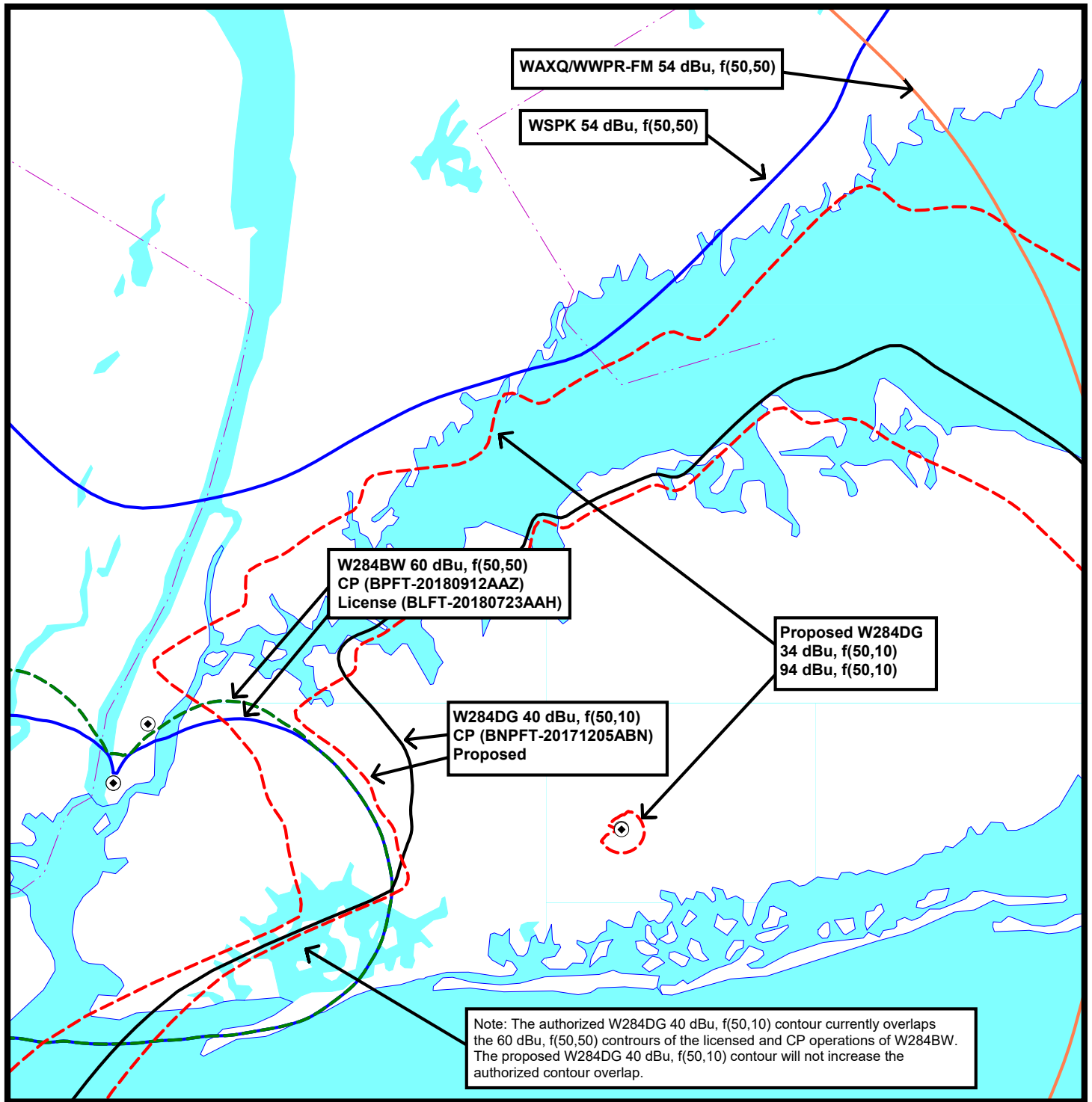
Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
WAXQ	282	FM	L2C	104.3	NEW YORK	NY	US	C	40-44-54.3	32.54	68.21	-35.67
23004	BLANK	BLH-19960426K/	B	NDI		6	415		073-59-08.5	282.67	SHORT	/1
WAXQ 54.0 dBu desired distance: 66.6 km				Proposed 94.0 dBu undesired distance: 1.6 km								
Proposed 54.0 dBu desired distance: 17.6 km				WAXQ 94.0 dBu undesired distance: 7.6 km								
WSPK	284	FM	L2C	104.7	POUGHKEEPSIE	NY	US	C	41-29-19.3	93.65	178.69	-85.04
19630	BLANK	BLH-19840802C/	B	OT		7.4	381		073-56-50.4	342.54	SHORT	/2
WSPK 54.0 dBu desired distance: 70.3 km				Proposed 34.0 dBu undesired distance: 58.4 km								
Proposed 54.0 dBu desired distance: 17.6 km				WSPK 34.0 dBu undesired distance: 161.1 km								
W284DG	284	FX	CP	104.7	HEMPSTEAD	NY	US	C	40-41-08.4	0.07	58.41	-58.34
201346	BLANK	BNPFT-2017120/	D	DRI		0.25			073-36-35.5	351.02	SHORT	/3
W284DG 60.0 dBu desired distance: 13.5 km				Proposed 40.0 dBu undesired distance: 42.3 km								
Proposed 60.0 dBu desired distance: 12.3 km				W284DG 40.0 dBu undesired distance: 46.1 km								
W284BW	284	FX	L2C	104.7	NEW YORK	NY	US	C	40-42-46.4	34.24	80.33	-46.09
143664	BLANK	BLFT-20180723/	D	DRI		0.099			074-00-47.5	275.34	SHORT	/2
W284BW 60.0 dBu desired distance: 21.3 km				Proposed 40.0 dBu undesired distance: 42.3 km								
Proposed 60.0 dBu desired distance: 12.3 km				W284BW 40.0 dBu undesired distance: 68.0 km								
W284BW	284	FX	MOD	104.7	NEW YORK	NY	US	C	40-42-46.4	34.24	80.33	-46.09
143664	BLANK	BPFT-20180912/	D	DRI		0.099			074-00-47.5	275.34	SHORT	/2
W284BW 60.0 dBu desired distance: 21.3 km				Proposed 40.0 dBu undesired distance: 42.3 km								
Proposed 60.0 dBu desired distance: 12.3 km				W284BW 40.0 dBu undesired distance: 68.0 km								
WWPR-FM	286	FM	L2C	105.1	NEW YORK	NY	US	C	40-44-54.3	32.54	68.21	-35.67
6373	BLANK	BLH-19940204K/	B	NDI		6	415		073-59-08.5	282.67	SHORT	/1
WWPR-FM 54.0 dBu desired distance: 66.6 km				Proposed 94.0 dBu undesired distance: 1.6 km								
Proposed 54.0 dBu desired distance: 17.6 km				WWPR-FM 94.0 dBu undesired distance: 7.6 km								

/1 There will be overlap normally prohibited by Section 74.1204. However, based on the U/D signal strength ratio method, there will be no actual interference due to lack of population under 74.1204(d). See Technical Summary and Figure 4.

/2 Proposal complies with the contour overlap provisions of Section 74.1204(a). See Figure 3.

/3 Current W284DG authorization.

Figure 3



10 0 10 20 30 Kilometers

COMPLIANCE WITH SECTION 74.1204
FM TRANSLATOR STATION W284DG
HEMPSTEAD, NEW YORK
CH 284 (104.7 MHZ) 0.250 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 4

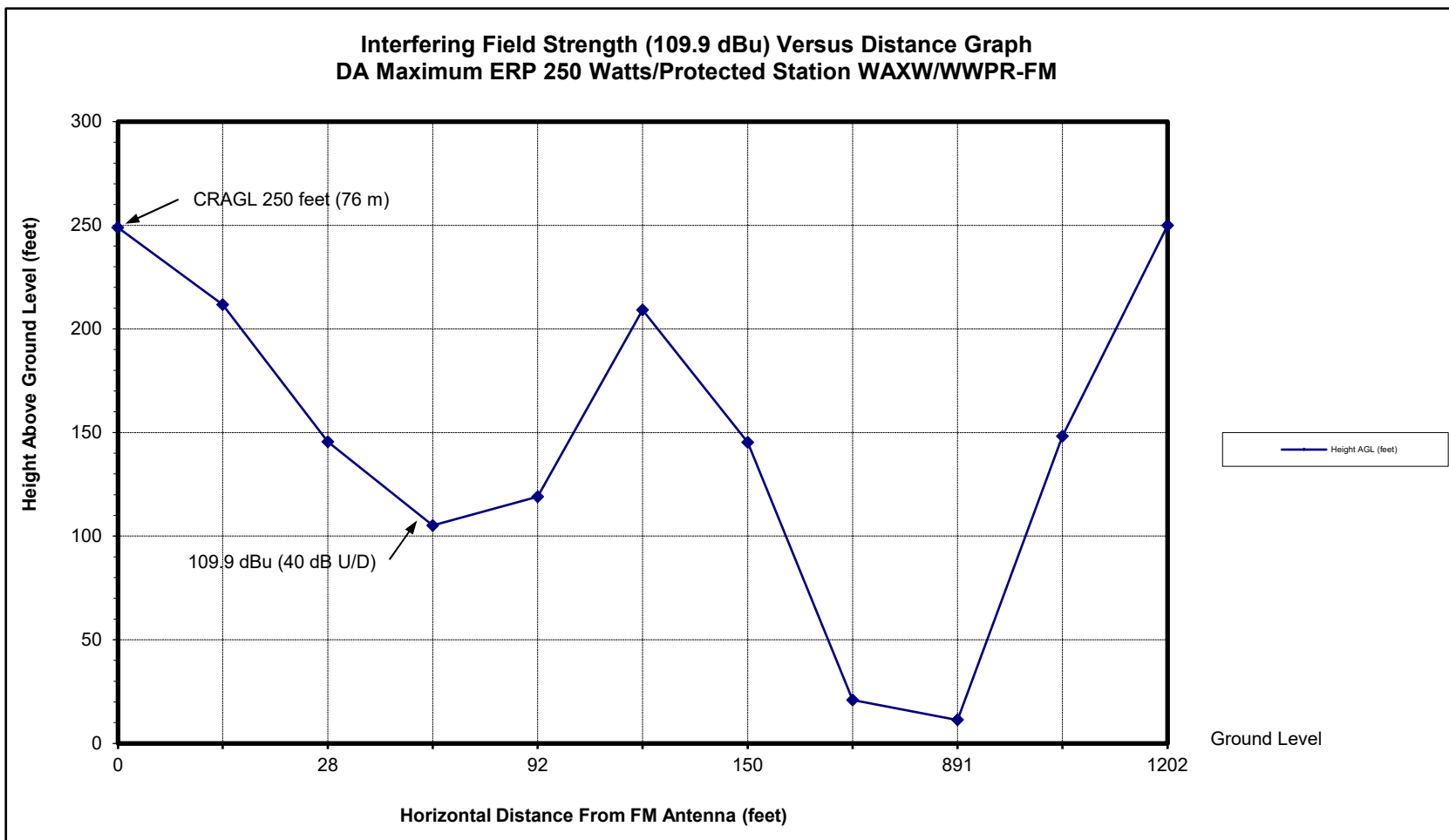


Figure 5

Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.999	19	0.646	37	0.102	55	0.133	73	0.100
2	0.995	20	0.615	38	0.079	56	0.136	74	0.095
3	0.990	21	0.582	39	0.057	57	0.138	75	0.090
4	0.982	22	0.550	40	0.037	58	0.140	76	0.084
5	0.972	23	0.517	41	0.017	59	0.140	77	0.079
6	0.959	24	0.484	42	0.001	60	0.140	78	0.073
7	0.945	25	0.451	43	0.018	61	0.140	79	0.068
8	0.929	26	0.419	44	0.034	62	0.139	80	0.062
9	0.911	27	0.387	45	0.048	63	0.137	81	0.056
10	0.891	28	0.355	46	0.062	64	0.135	82	0.050
11	0.869	29	0.323	47	0.074	65	0.133	83	0.044
12	0.845	30	0.293	48	0.085	66	0.130	84	0.038
13	0.820	31	0.263	49	0.095	67	0.126	85	0.032
14	0.794	32	0.234	50	0.104	68	0.123	86	0.026
15	0.767	33	0.205	51	0.111	69	0.119	87	0.020
16	0.738	34	0.178	52	0.118	70	0.114	88	0.013
17	0.708	35	0.152	53	0.124	71	0.110	89	0.007
18	0.678	36	0.126	54	0.129	72	0.105	90	0.000

Elevation Pattern Tabulation

Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, & 68xx except 6832, 3-bay half-wave-spaced.

Relative Field at 0° Depression = 1.000